

Work Order ID 56803

March 10, 2010 1:28:37 PM



Page 1

Item ID: D3319-1

Accept



Setup Start

Revision ID:

Item Name: Wearplate

Stop



Start Date: 10/03/2010 Start Qty: 12.00



Cust Item ID:

Required Date: 18/03/2010 Req'd Qty: 12.00

Customer:

Reference:

Approvals:

Process Plan:

PL

Date:

10-3-10

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D3319

Rev B

100

0.00



FLOW WATER JET

Waterjet

Memo

0.00

FLOW CNC Waterjet

1-Cut as per Dwg D3319 ☒ Dwg Rev: *B* ☐ Prog Rev: *B* ☐ 2-
Deburr if necessary

1010 .050

MAT NOT PULLED

IB 10-3-15

(10)

110

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

IB 10-3-15

120

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

5/10/03/10

(12)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56803

March 10, 2010 1:28:37 PM



Page 2

Item ID: D3319-1

Accept



Setup Start



Revision ID:

Item Name: Wearplate

Stop



Start Date: 10/03/2010 Start Qty: 12.00



Cust Item ID:

Required Date: 18/03/2010 Req'd Qty: 12.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130



Small Fab

Small Fab

0.00

Memo

0.00

Small Fab

Deburr if necessary

N/A

140



Brake NC

NC BRAKE

0.00

Memo

0.00

Brake NC

1- Form using DT8326 & DT8261 as per Dwg D3319Rev: B 2- Form
flat on press using DT8776 block

28 10/03/17

12 2

150



QC

QC6- Inspect dimensions to drawing

0.00

Memo

0.00

Quality Control

8 10/03/18

(412)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56803

March 10, 2010 1:28:37 PM



Page 3

Item ID: D3319-1

Accept



Setup Start



Revision ID:

Item Name: Wearplate

Stop



Start Date: 10/03/2010 Start Qty: 12.00



Cust Item ID:

Required Date: 18/03/2010 Req'd Qty: 12.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160



Large Fab

Large Fab

0.00

Memo

0.00

1- Layout weld location as per Dwg D3319 using jig D3319-1T3 2- Weld hard surface using D3319-1T2 per QSI 004 and Dwg D3319 Rev: ☐ Qty Part Number Description Batch ☐ A/R N/A 7560 Hardcoat Rod M113078

12 10-3-23
412

170



QC

Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

Memo

0.00

5 10/03/24

180



QC

Quality Control

QC5- Inspect part completeness to step on W/O

0.00

Memo

0.00

5 10/03/24

412

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56803

March 10, 2010 1:28:37 PM



Page 4

Item ID: D3319-1

Accept



Setup Start



Revision ID:

Item Name: Wearplate

Stop



Start Date: 10/03/2010 Start Qty: 12.00



Cust Item ID:

Required Date: 18/03/2010 Req'd Qty: 12.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

190

Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3

0.00



M112588

Powdercoat

Memo

0.00

=> M 10/03/30

(x12) /

Powder Coating

START TIME: 11:30am OVEN TEMPERATURE:
12.00 FINISH TIME: 3209

200

QC3- Inspect Part Finish

0.00



DR 10-3-30

(12) /

QC

Memo

0.00

Quality Control

210

Packaging

0.00



Packaging

Memo

0.00

Pc 10/4/8 1/2

Packaging

Identify on inside surface using a permanent fine point marker with the following: ☐ TCCA-PDA, Dart Aerospace Ltd. ☐ P/N: D3319-1, B/N: BXXXXX ☐ For Product Eligibility see PDA05-18 ☐ and Stock ☐ Location: 497

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 56803

March 10, 2010 1:28:37 PM



Page 5

Item ID: D3319-1

Accept



Setup Start

Revision ID:

Item Name: Wearplate

Stop



Start Date: 10/03/2010 Start Qty: 12.00



Cust Item ID:

Required Date: 18/03/2010 Req'd Qty: 12.00



Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

220

QC21- Final Inspection - Work Order Release

0.00

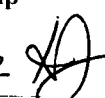


QC

Memo

0.00

Quality Control

10/04/12 
MF
10-4-9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

March 10, 2010 1:29:30 PM

Page 1

Work Order ID: 56803



Parent Item: D3319-1



Parent Item Name: Wearplate

Start Date: 10/03/2010

Required Date: 18/03/2010

Comments: IPP: B05.10.14 Added step 9, dwg rev B KJ/EC
IPP Rev:C Now on Waterjet 06-10-26 JLM

Start Qty: 12.00

Required Qty: 12.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
M1010S18GA		Purchased	No			100	sf	6.0000	7.9326			



1010/1025 SHEET .048



18-10-3-18

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

MAT

6

109022

3

109948

3

(12)

109022 x 6 = 3.9663
109948 x 6 = 3.9663

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order:	54803
Description: Wearplate		Part Number:	D3319-1
Inspection Dwg: D3319	Rev: B	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
4.984	+/-0.010	4.981	✓			
1.600	+/-0.010	1.603	✓			
2.660	+/-0.010	2.664	✓			
3.190	+/-0.010	3.194	✓			
3.563	+/-0.010	3.563	✓			
4.712	+/-0.010	4.714	✓			
0.60	+/-0.030	.600	✓			
10.576	+/-0.010	10.576	✓			
11.942	+/-0.010	11.942	✓			
18.09	+/-0.030	18.09	✓			
Ø0.316 x 0.546	+0.006/-0.001 x +/-0.010	.316 x .547	✗			
Ø0.316 x 0.670	+0.006/-0.001 x +/-0.010	.316 x .671	✗			
Ø0.190	+0.005/-0.001	.191	✓			

Measured by: RB	Audited by: S	Prototype Approval:	N/A
Date: 10-3-15	Date: 10/03/16	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.05.31	New Issue	KJ/JLM	[Signature]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

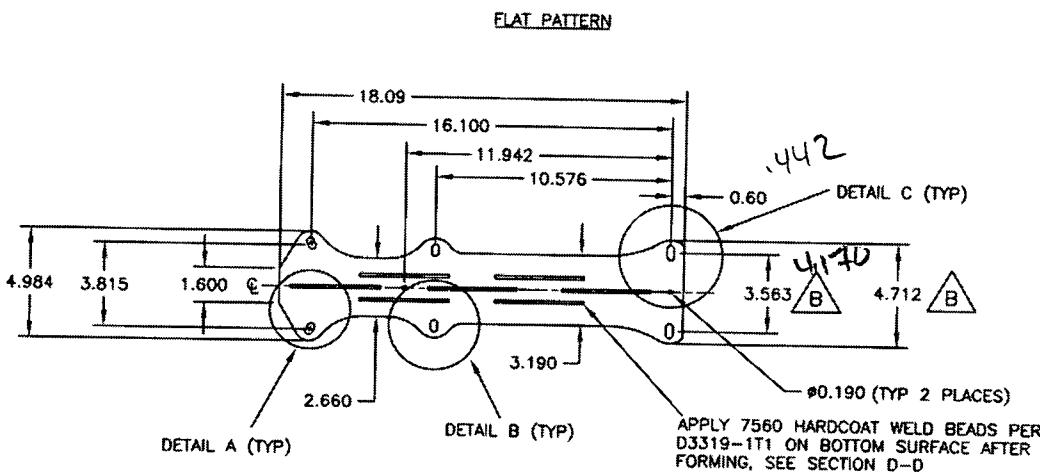
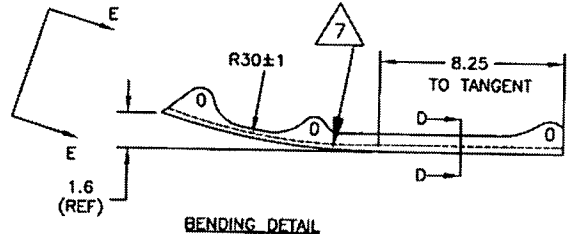
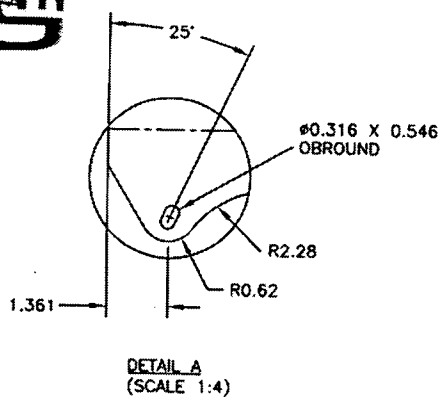
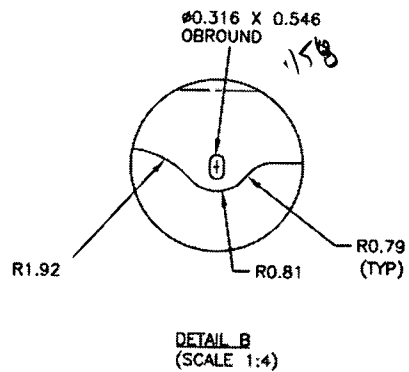
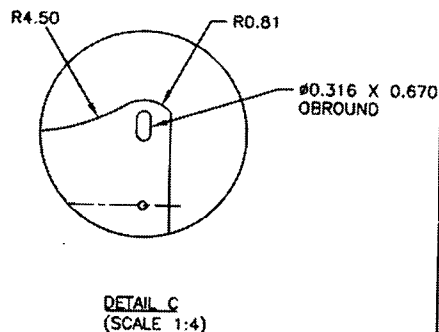
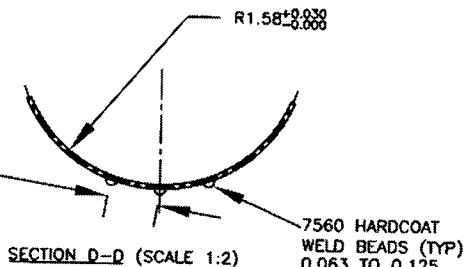
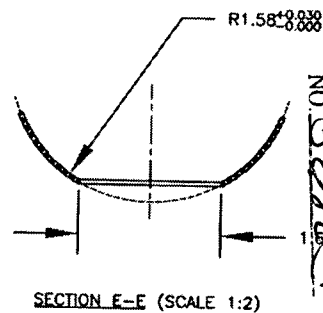
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DARTENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENTWITHOUT NOTICE
WORK ORDER NO. 54583

DESIGN	DRAWN BY	DART AEROSPACE LTD
P41	P41	HAMKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO.
DATE	DATE	D3319
05.06.06	04.09.24	WIDEN HOLES, REDUCE WIDTH -3/-5/-7
	05.06.06	NEW ISSUE
		WEARPLATE
		SCALE
		1:8

RELEASED
05-07-30**D3319-1 WEARPLATE**

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:
"TCCA-PDA, DART AEROSPACE LTD., P/N D3319-1 B/N BXXXXX, FOR PRODUCT ELIGIBILITY SEE PDA05-18"

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

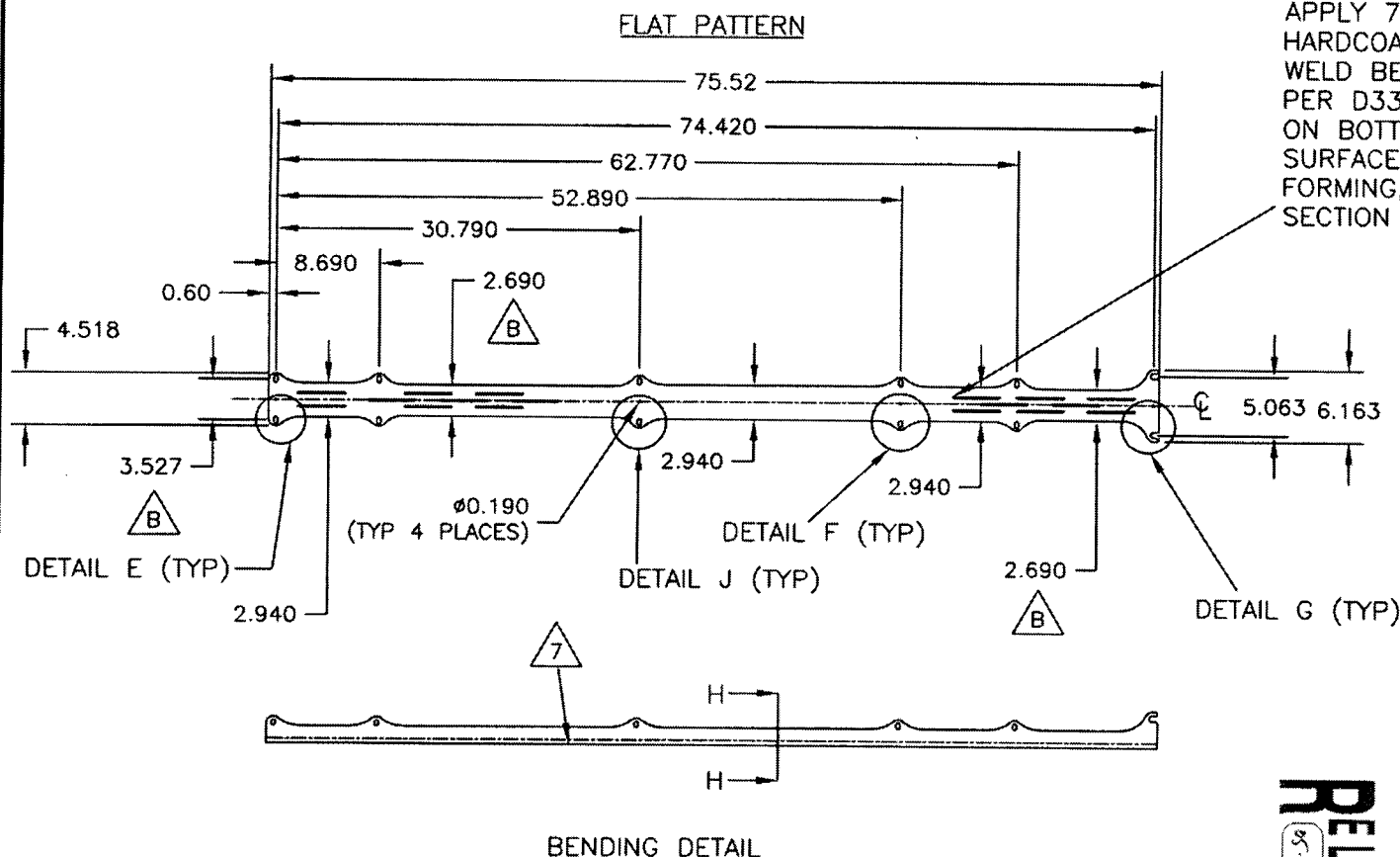
NOTE: Date & initial all entries

DART

DESIGN	04	DRAWN BY	04	DART AEROSPACE LTD
CHECKED		APPROVED		HAWKESBURY, ONTARIO, CANADA
DATE	05.06.06	TITLE	D3319	REV. B
			WEARPLATE	SHEET 2 OF 5
				SCALE 1:15

410 54863

APPLY 7560
HARDCOAT
WELD BEADS
PER D3319-3T1
ON BOTTOM
SURFACE AFTER
FORMING, SEE
SECTION H-H



RELEASED

D3319-3 WEARPLATE

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:
"TCCA-PDA, DART AEROSPACE LTD., P/N D3319-3 B/N BXXXXX,
FOR PRODUCT ELIGIBILITY SEE PDA05-18"

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

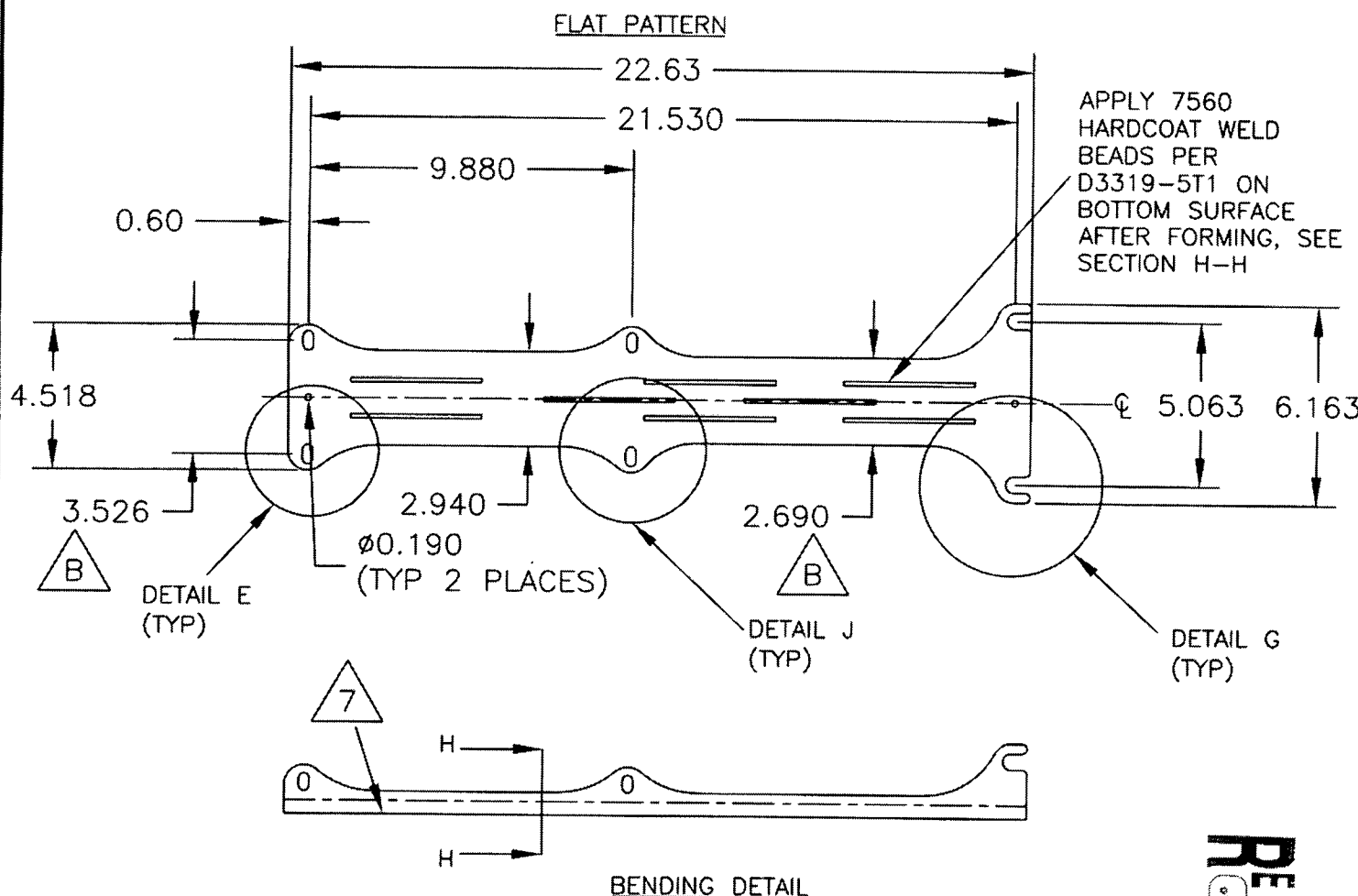
NOTE: Date & initial all entries

DART

DESIGN	041	DRAWN BY	041	DART AEROSPACE LTD
CHECKED	<i>[Signature]</i>	APPROVED	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA
DATE	05.06.06	DRAWING NO.	D3319	REV. B
		TITLE	WEARPLATE	SHEET 3 OF 5
		SCALE	1:5	

410 54863

RELEASED
05-09-30-110



APPLY 7560
HARDCOAT WELD
BEADS PER
D3319-5T1 ON
BOTTOM SURFACE
AFTER FORMING, SEE
SECTION H-H

D3319-5 WEARPLATE

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:
"TCCA-PDA, DART AEROSPACE LTD., P/N D3319-5 B/N BXXXXX,
FOR PRODUCT ELIGIBILITY SEE PDA05-18"

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

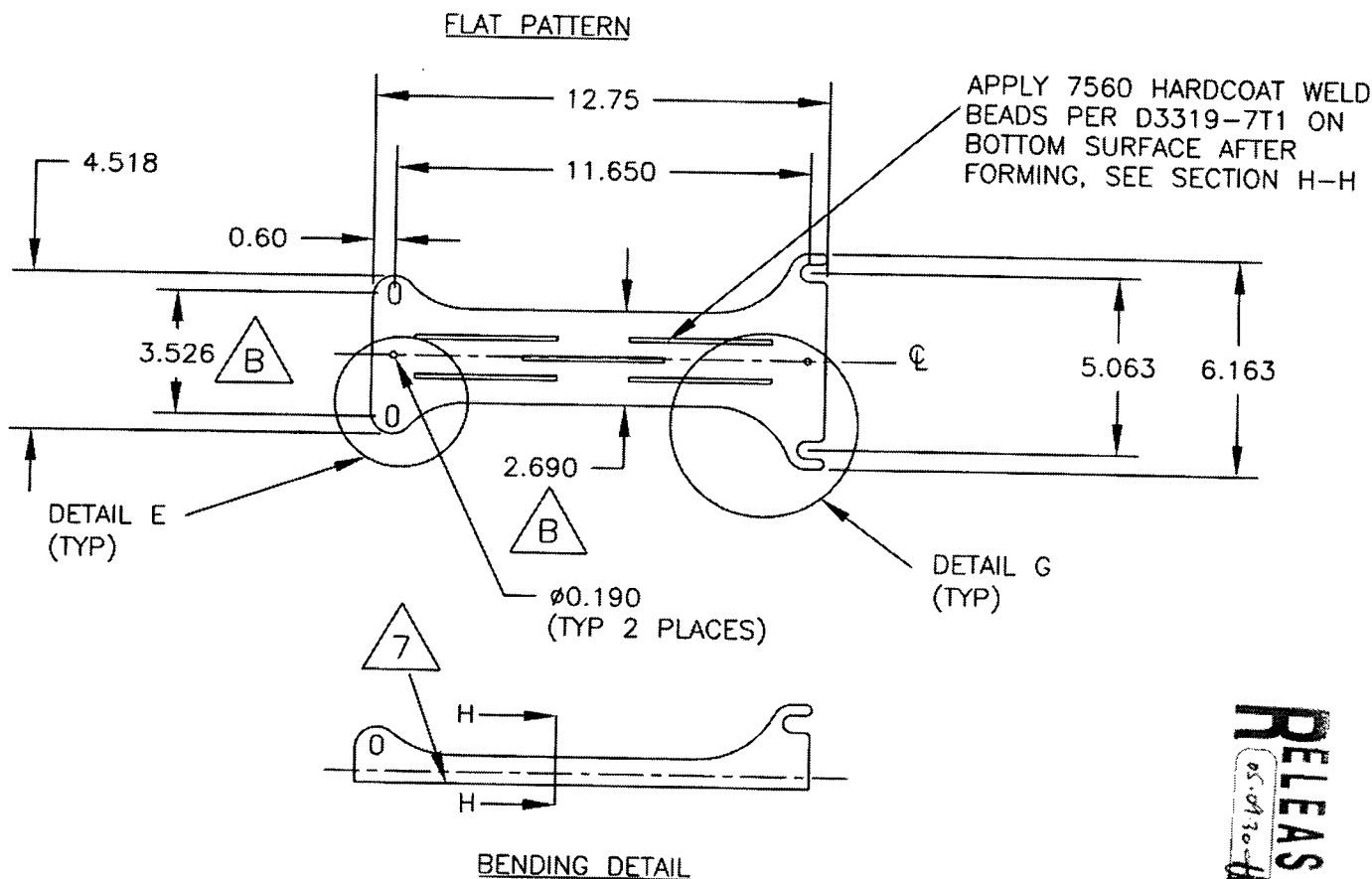
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART

DESIGN	PH	DRAWN BY	PH	DART AEROSPACE LTD
CHECKED	PH	APPROVED	PH	HAWKESBURY, ONTARIO, CANADA
DATE	05.06.06	DRAWING NO.	D3319	REV. B
TITLE	WEARPLATE	SHEET 4 OF 5	SCALE	1:5

**RELEASED**
05.07.30-11

D3319-7 WEARPLATE

- 1) MATERIAL: AISI 1010-1025 OR ASTM A36/A366/A1008 OR CSA G40-21, 38W/44W/50W/60W/70W SERIES STEEL 18 GAUGE (0.048 THICK)
- 2) FINISH: POWDER COAT GREY SANDTEX (REF.4.3.5.6) PER DART QSI 005 4.3
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) PART IS SYMMETRICAL ABOUT CENTERLINE
- 5) ALL DIMENSIONS IN INCHES
- 6) WELD PER DART QSI 004
- 7) IDENTIFY ON INSIDE SURFACE AS INDICATED USING FINE POINT PERMANENT INK MARKER:
"TCCA-PDA, DART AEROSPACE LTD., P/N D3319-7 B/N BXXXXX,
FOR PRODUCT ELIGIBILITY SEE PDA05-18"

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

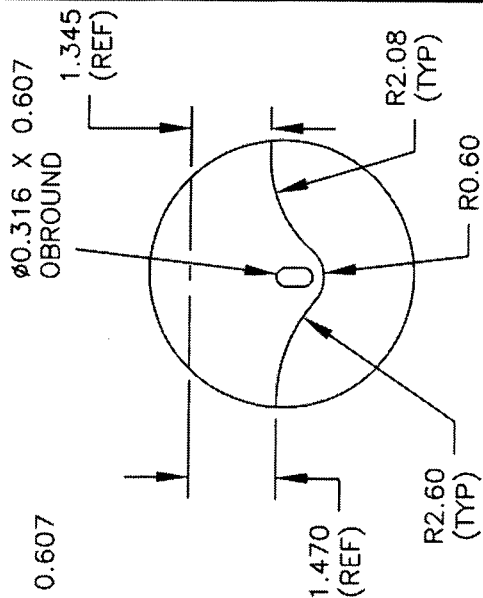
NOTE: Date & initial all entries



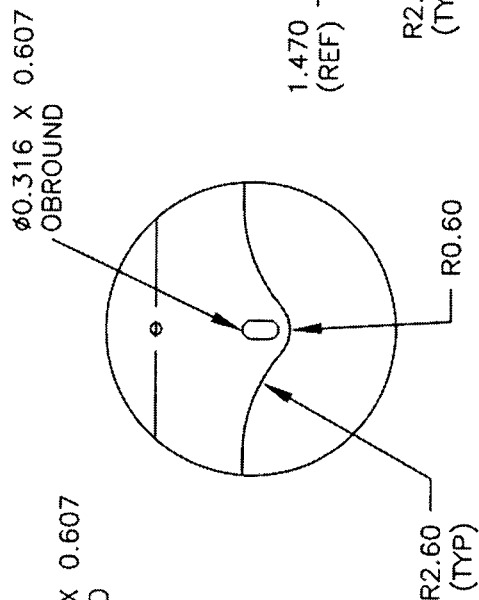
DESIGN PH	DRAWN BY PH	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D3319	REV. B SHEET 5 OF 5
DATE 05.06.06	TITLE WEARPLATE		SCALE 1:3

WLO 56803

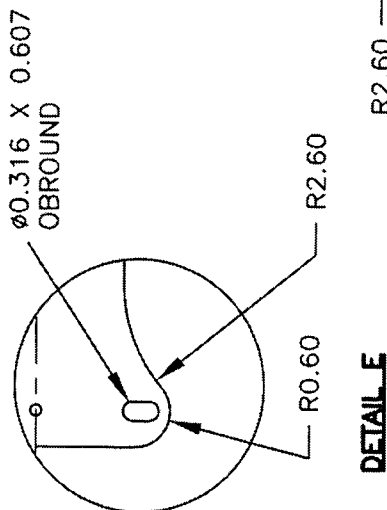
RELEASED
05.09.30



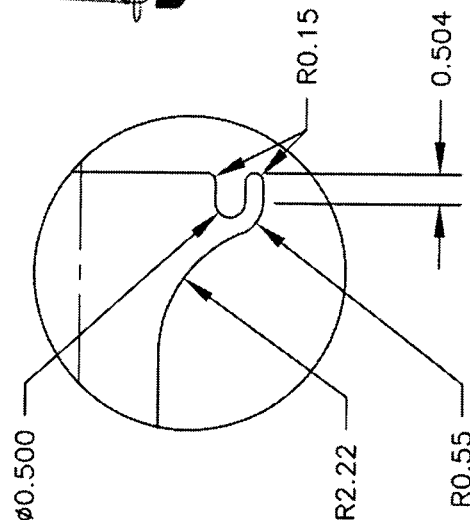
DETAIL J



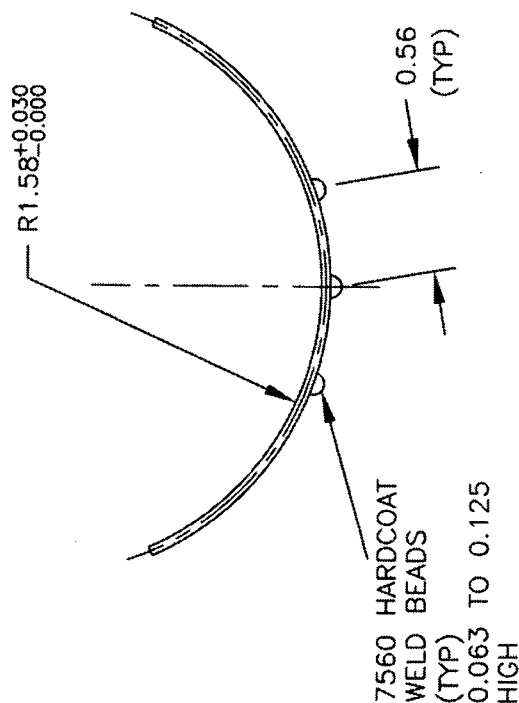
DETAIL F



DETAIL E



DETAIL G



SECTION H-H
(SCALE 1:1)

Copyright © 2004 by DART AEROSPACE LTD

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries